

**Sierra Nevada Conservancy-Progress Report**

**Sierra Nevada Conservancy Grant Program  
Safe Drinking Water, Water Quality and Supply, Flood Control  
River and Coastal Protection Act of 2008 (Proposition 84)**

**Grantee Name:** Feather River College

**Project title:** Feather River College Hatchery site improvement

**SNC Reference Number:** SNC 070253      **Submittal Date:** 9-20-2010

**Report Preparer:** Zachary Parks      **Phone #:** 530 283 0202 224

**Check one:**

**6-Month Progress Report**

**Final Report**

<p><b>6-Month Progress Reports</b> should reflect the previous six months. <b>Final Reports</b> should reflect the entire grant period.</p>
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**A. Progress Report Summary:** (Please provide a general description of work completed during this reporting period.)

The project has been completed as of June 30 2010. In looking back the project was much more involved than initially thought, and much more challenging than expected. Since this project was preceded by a short planning and development phase not all of the challenges were identified. There were some parts that were difficult to locate and some had to be constructed on site. The biggest challenge could not have been for seen and what was the grant freeze. This freeze stopped work and put us behind schedule as I am sure many other projects suffered the same. The project beginning was a flurry of equipment purchases returns and redesigns, followed by installation of the plumbing and equipment. Midway through the project it was determined that weather protection was needed for all of the filtration equipment and the oxygen separator. Plans for two building extensions were drawn up one large 35' by 47' and one 15' by 25' at opposite ends of the existing structure. Funding was secured from the Dean Witter Foundation, Kokanee Power, the Plumas County fish and game commission along with \$1000 from the SNC to complete these buildings' construction.

The recycle system is now up and operating and waiting additional monitoring and control systems that are funded by State SB70 funds (\$75,000) that were secured by the college. This additional equipment will help to prevent fish loss and to maintain water quality. These instruments will also provide data that will be used in several classes that are associated with the hatchery.

**B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved:** (Include specific information, such as public meetings held, agency participation, partnerships developed, or acres mapped, treated or restored.)

Well the deliverables were water quality parameters, equipment procurement, installation, and public out reach. Well most notable is that the project is completed this includes the installation of the major equipment, (drum filter, back up generator, bio filters, oxygen separator, and tanks). The equipment installation really went off with out any major problems some minor adjustments to plumbing and placement had to be made. Public outreach has been conducted in many ways, one is through the various environmental studies classes that are taught here at FRC, second is all of the tours that we conduct both scheduled and drop by guests. We conduct an average of 100 tours a year with our local elementary and secondary education institutions these schools are in Plumas, Sierra and Lassen counties and involve ages from 2<sup>nd</sup> and third graders through seniors. The hatchery has presented our improvements at the Northwest Fish culture conference in Redding California in December 2009 to approximately 400 attendees from all over the western United States.

We have built several partnerships including the California department of fish (CDFG) and game, the Plumas County office of Education, and the California Aquaculture association (CAA). The Partnership with CDFG has grown from partners in stocking fish for youth fishing derbies, and Plumas county lakes but to a proposed agreement of contract education for some of their current employees. The CAA and FRC Hatchery have begun working on several small pamphlets that will show case our efforts to produce sustainable aquaculture products and the training that we offer. We give tours on a nearly weekly basis, and since the onset of the project we have had 2132 people visit the hatchery. These people consist of local elementary students, college students and families, visitors to the area who just ended up here, and individuals who were previous students of the college many years ago. Many have complimented us on the grounds and most notable on the efforts to reduce water use and operate more efficiently as a whole.

**C. Challenges or Opportunities Encountered:** (Please describe what has worked and what hasn't; include any solutions you initiated to resolve problems. If your project is not on schedule, please explain why here.)

The challenges that we encountered were all traceable to the freeze of 2009 which put us off schedule, however we made great strides in spring of 2010 and basically completed the project in June 2010. The biggest challenge was to get back on the schedule of the FRC maintenance crew which had other tasks that needed to be completed. They were able to adjust project timing to accommodate

our needs in order to meet the grant deadlines; in addition we reallocated some funds to our consultant who was also able to help with equipment installation. This was a major benefit as he was able to redesign and adjust small system components while on the job site.

While in the midst of this SNC project an opportunity for additional state funding through the SB70 which is designed to strengthen career technical education became available. The college was successful in securing an additional \$75,000 for a monitor and controls system for the hatchery. This equipment monitors water quality and equipment operation. The water quality data will be taken and logged continuously so that management decisions can be made in real time. The water quality data will also be used in classes such as fish culture class where it will be used in simulations and student calculations. The equipment monitoring portion will alert staff to problems anytime day or night allowing us to attempt to prevent fish loss due to malfunctions or failures.

**D. Unanticipated Successes Achieved:** (Please describe any additional successes beyond completing scheduled tasks or meeting scheduled milestones.)

I would view the additional funding for building construction, and monitoring and controls as additional successes as with out the initial SNC funding we would not have been able to secure these funds. We have also set upon and agreement with the California department of fish and game to train their employees.

**E. Compare Actual Costs to Budgeted Costs:** (Please refer to your grant agreement to list your deliverables/budget categories and budgeted costs compared to actual costs incurred during this reporting period in the table below.)

<b>PROJECT BUDGET CATEGORIES</b>	<b>Budgeted SNC Dollars</b>	<b>Actual Dollars</b>
Back up generator	20000	<b>18667.94</b>
Equipment	39750.00	<b>34063.60</b>
<b>Aquaculture consultant</b>	5000	<b>11097.20</b>
<b>Direct admin</b>	5250	<b>5250</b>
<b>GRAND TOTAL</b>	70,000	<b>69078.74</b>

**Explanation:** (if needed)

We reduced the funds spent on equipment and transferred them to the consultant, which was used for redesign of certain subsystems and he also helped with the installation of the equipment and plumbing.

**F. Do you have information to report on the project-specific Performance Measures for your project?** (If so, please list the Performance Measures below and describe your progress.)

1. The completion of the aquaculture consultant's analysis and design plan for the remaining site improvements has been completed and implemented.
2. Pre project survey of existing discharge was completed in October 2008.
3. Post project survey of discharge will not be completed until spring or summer of 2011 due to not having any fish in the system. Time will be needed to hatch the eggs and grow the fish. One special note to mention our water use has decreased from 5.1 million gallons a day (3441.0 gallons a min) to 11,250 gallons (8 gallons a min) a day under normal operation.

**G. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies.** (Include digital photos, maps, media coverage of project, or other work products.)

There were no other relevant materials that were produced as a result of this project at this time. We are currently working on an article for the Rural community college alliance that will showcase our program on a national level when such article is produced we will send you a copy.

**H. Next Steps:** (Work anticipated in the next 6 months, including location and timing of any scheduled events related to the project.)

We will be finishing up the installation of the monitor and controls systems funded by SB70 monies and are testing the system for an anticipated grand opening spring 2011. During this time we will be trouble shooting the system via simulations of differing fish stocking loads and adjusting equipment settings accordingly.

## **Please Complete this Section for FINAL Report ONLY**

### **Capacity-Building Results and Collaboration and Cooperation with Stakeholders:**

(What partnerships did you initiate or strengthen as a result of this project? How did they affect the project outcome? If applicable, how did this grant increase your organization's capacity? What is your plan to sustain this increase?)

We have built stronger relationships with partners that have already in place such as trout unlimited, kokanee power and the California department of fish and game. We are working with these groups on fish restoration efforts in Plumas and Sierra counties.

We have also created a new partnership with the Sacramento area and Gold Lake resort in an effort to increase the population of brown trout in gold lake. This partnership has yielded a \$10,000 a year contribution from the Sacramento Region Community Foundation to FRC hatchery to fund the rearing of 10,000 trout a year.

### **Description of Project Accomplishments:**

#### **1. Most Significant Accomplishment**

Describe in one concise, well-written paragraph, the most significant accomplishment that resulted from this grant.

We have designed and constructed one of the most advanced Aquaculture facilities to teach students through hands on learning in California if not the entire west while demonstrating that aquaculture can have a small impact on the aquatic environment.

#### **2. WOW Factor**

If applicable, please describe anything that happened as a result of the project or during the project that is particularly impressive.

The system as a whole is quite impressive, to see it all come together from planning to completion of construction and equipment installation. The transformation from what the hatchery was to what it is now is overwhelming. We went from having a facility that was in disrepair and not really suitable for our goal of providing hands on education.

**3. Design and Implementation**

When considering the design and implementation of this project, what lessons did you learn that might help other grantees implement similar work?

The design and implementation of this project went pretty much according to plan, with the exception of the grant freeze. That did pose quite a difficult situation as equipment was left in limbo and in less than favorable conditions due to time of year and weather. I would suggest a contingency plan if at all possible.

**4. Indirect Impact**

Please describe any indirect benefits of the project such as information that has been developed as a result of the project is being used by several other organizations to improve decision-making, or a conservation easement funded by this grant that encouraged other landowners in the area to have conservation easements on their property.

None that I am aware of.

**5. Collaboration and Conflict Resolution**

If you worked in collaboration or cooperation with other organizations or institutions, describe those arrangements and their importance to the project. Also, describe if you encountered conflict in the project and how you dealt with it, or if there was conflict avoided as a result of the project.

Not applicable

**6. Capacity-Building**

SNC is interested in both the capacity of your organization, as well as local and regional capacity. Please describe the overall health of your organization including areas in need of assistance. SNC is interested in the strength and involvement of your board, significant changes to your staff, size and involvement of membership. In addition, describe how your project improved capabilities of partners, or the larger community.

The FRC hatchery is in a unique situation where we operate in the college and the foundation. On the college side of we have hired a new president mid project, and there are two new board of trustees' members, yet the relationship and support of the hatchery remains strong. Due to the current financial situation of the state the college is experiencing a cash flow problem that I do not have much information on.

On the college foundation side there have been numerous staff changes and currently there are many new board members, I am currently unaware of the foundation status as a functioning body.

## **7. Challenges**

Did the project face internal or external challenges? How were they addressed? Describe each challenge and any actions that you took to address it. Was there something that SNC did or could have done to assist you? Did you have to change any of your key objectives in response to conditions “on the ground”?

The biggest challenge that we faced was timing of project work, as most of the project was completed by FRC facilities staff, hatchery staff, and students other responsibilities did slow progress at times. This was addressed by constantly reminding staff of the priority of this project and its timely completion.

## **8. Post Grant Plans**

What are the post-grant plans for the project if it does not conclude with the grant? Include a description of the following (if applicable): (1) Changes in operations or scope; (2) Replication or use of findings; (3) Names of other organizations you expect to involve; (4) Plans to support the project financially, and; (5) Communication plans?

Our post grant plans directly relating to the project is to ease in to production meaning to slowly increase the stocking density of fish in the system over the next year. During this time we will be looking for shortfalls in the design that may hinder reaching our full production goals. We are actively seeking funding for general improvements to the facility and equipment that is out of date. The project has led to a need to redesign the aquaculture courses that are taught here at FRC including more details on the operation of such a facility and associated equipment.

We hope that through this project the increased production capacity will fund most of the hatcheries operations and normal maintenance.

We hope to continue our partnership building with local and regional organizations to increase fish populations and strengthen our educational opportunities.

Indirectly FRC and the Maidu Summit Consortium have applied to the Prop 84 nature education Facilities Program for funding of a new nature education and Maidu environmental culture center. This center will focus on the various habitats found in the Sierra Headwaters region and the Maidu environmental culture. We will show case the aquatic flora and fauna from the head waters of the Feather River to the

ocean. We will be notified if we are successful in our grant application in December 2010.

**9. Post Grant Contact**

Who can be contacted a few years from now to follow up on the project? Please provide name and contact information.

You may contact

Zachary Parks  
Environmental Studies Instructional Assistant  
Hatchery Director  
Feather River College  
570 Golden Eagle Ave.  
Quincy Ca. 95971  
phone: 530 283 0202 ext 224  
fax: 530 283 3757  
email: [zparks@frc.edu](mailto:zparks@frc.edu)

**SNC-approved Performance Measures:** (Please list each Performance Measure for your Project, as identified in your Grant Agreement, and the results/outcomes.)

1. Resources leveraged

a. Resources leveraged to complete the project

In this project we were able to leverage funds from several different places, the Arp family foundation \$2200, Kokanee power \$10,000, Plumas County Fish and game commission \$6,000, Trout Unlimited \$2,000, and the PG&E foundation.

b. As a result of this project we were able to leverage another \$75,000 for the hatchery and two projects associated with the SNC project. The first project is the purchase and installation of monitoring and controls. These items monitor the SNC purchased equipment and water quality of the system and report changes and failures to the hatchery director so corrective measures can be addressed in real time. The data that is collected on water quality will also be used in several classes in the environmental studies department to teach students about water chemistry and quality.

The second project is the creation of a training partnership with the California Department of Fish and Game, in which we will be creating curriculum to train current DFG employees on hatchery techniques. This curriculum will also be used for FRC students to provide a hatchery technician certificate. These certificates will provide our students with increased employment opportunities based on the skills and knowledge they will have acquired upon completing the certificate program.

2. Impact on collaboration and cooperation among stakeholders

a. This project really did not involve many of our stakeholders from outside the college community as it was a facilities improvement project. The involvement of outside parties was more in the form of financial support as matching funds.

b. There was no real impact on cooperation or conflict with stakeholders on the project as most were not involved in the design or implementation.

3. Capacity building within the Region

a. Overall the receipt of this grant did not change the capacity of the region other than for FRC to my knowledge.

4. Project accomplishments
  - a. With the completion of this project we totally revamped our production system; we reduced our water use and effluent impact on the natural environment. The purchase of the back up generator provides us with reliable back up power in the event that we lose power for short or long periods of time. The redesign of the system from a flow through system to a recycle system reduces our dependency on the near by stream as a water source. This is particularly beneficial since the stream has dried up since the beginning of the project. The equipment has also allowed us to increase and improve our educational opportunities in several ways in now allows the students to get hands on experience with current and up to date equipment used in the field of aquaculture and provides them with the ability to conduct water quality monitoring with a purpose. In many cases it is hard to connect why we do a particular lab to a real world situation. The new system allows for both at the same time, they get to see that if the water quality is poor the fish health is reduced and if we release poor quality water it makes an impact down stream it really demonstrates the need for environmental stewardship.
  - b. Right in the heels of this project is the SB70 water quality monitoring and controls project, which has also been delayed some what because of budget freezes, that will allow us to monitor water quality and equipment function and make adjustments from afar via the internet. It will also continuously monitor water quality and record the data. This data will be used to make management decisions that should result in a healthier and more efficiently produced product (fish) and at the same time reduce our effluent impacts on the natural environment.
  - c. Probably the most notable significant positive experience is seeing how the students desired to learn about what was happening in the construction and installation of the buildings and equipment. They would volunteer their time to be apart of the project, from digging to plumbing asking questions and even making some suggestions. They worked along side me other hatchery staff, the maintenance crew and the aquaculture engineer. The student learned life skills that can be applied to many differing career choices or to personal projects. It allowed us to have in depth conversations about aquaculture practices, water quality regulations and environmental stewardship. Many of the students stated that they felt they were part of something great and truly meaningful not the typical learning experience that seemed pointless at the time.
5. The number of gallons of water conserved and the amount of effluent reduction.
  - a. The total gallons of water conserved from this project are kind of two fold, first with the suspension of production for the past two and a half years we have not used much water at all, an approximate total of 80,000 gallons. Under past conditions we would have used 5.1 million gallons of water a day. The new systems will use 11,580 gallons a day. So we have cut our water use by 23% a day. So under normal conditions in a year we

will have used 4million gallons under the old configuration we would have used 1 billion gallons of water.

- b. The water quality will have also improved due to the fact that we can now monitor the quality and we can actually adjust our inputs to reduce our impact. We are able to adjust feed inputs with less phosphorus, and nitrogen which are the two most important ingredients that contribute to pollution. We can also increase our bio filtration to remove more of these wastes by manipulating the bacteria populations in the filters.
6. The change in the number of fingerlings that are hatched after the completion of the project
- a. The increase in the number of fingerlings will not be seen until the spring of 2011 as eggs are not available until mid December, it then takes 30 days for the eggs to hatch. However in previous years we had the capacity to hold and hatch roughly 20,000 fingerlings, after the project completion we have the capacity to hatch 1.2 million fingerlings. The actual numbers will not be seen until later.

## **Sierra Nevada Conservancy Grant Program Project Reporting Guidelines**

Progress Reports are required periodically throughout the term of the Grant Agreement (Refer to Exhibit B of the Grant Agreement). These reports will allow you and the Sierra Nevada Conservancy (SNC) to see the degree to which the project is on track and achieving your projected outcomes. Your Progress Reports will further provide the SNC with information that will help us to explain your work to the Board Members and various other audiences. Timing of Progress Reports is specified in the Project Schedule included in Exhibit A of the Grant Agreement, but generally every 6 months until completion of the project.

A Progress Reporting Form is provided to Grantees on the SNC Website. **Six-month Progress Reports** should reflect the previous 6-month period; **Final Reports** should address each question for the entire grant period – looking at the project as a whole.

The form specifies the items you will need to report on. For the Six-Month Interim Report these include, but are not limited to: *A Progress Report Summary of work completed, Deliverables or Outcomes Completed, Challenges or Opportunities Encountered, Unanticipated Successes Achieved, Actual Costs compared to Budgeted Costs, Any Additional Relevant Materials Produced, and Next Steps.*

The Final Report will include additional information, such as: *Resources Leveraged, Capacity-Building Results and Collaboration and Cooperation with Stakeholders, a Description of Project Accomplishments, and SNC Approved Performance Measures.*

Please make sure that you submit complete reports by the dates requested in your Grant Agreement.